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and similarity to some others exhumed on other islands, suggests the probability that it comes from a prehistoric race, older than either of those mentioned, and perhaps not belonging among the Malayan stock.

With regard to the Negritos, Professor Virchow expresses the opinion that they are a 'primitive' type; at the same time he throws out various speculations on the rapidity and uncertain limits of variation in man, how much it arises from environment, etc., so that the reader almost expects him to say that originally the two types of the Philippines might have been one.

It should always be remembered that the so-called 'Law of Variation' in organic forms is a purely negative expression, formulating merely non-identity, and can have no other limits than those temporarily established by observation.

#### WAMPUM AND STONE MASKS.

PROFESSOR E. T. HAMY, well known for his numerous American studies, and now President of the Society of Americanists of Paris, has lately published two articles in the journal of the Society of considerable interest.

One is a description of a wampum belt believed to be of Huron manufacture, transferred, it is suggested, at the treaty made by Frontenac in 1673. A full examination of the beads and the method of boring would be desirable, in order to ascertain its antiquity.

The second paper is on a stone mask brought by M. Pinart from the Northwest coast. Its traits are allied to those of the wooden mask, but as an example in stone from that locality it is believed to be unique.

Another subject, to which Professor Hamy has devoted a short article in the *Compte Rendu de l'Academie des Inscriptions*, is a series of six ancient portraits of the Incas of

Peru, of unknown provenance, discovered in an old house at Rochefort. They are especially interesting as showing the sumptuous official costume worn by the ancient monarchs of the Quichuas.

#### NATIVE AMERICAN ART-MOTIVES.

DR. H. STOLPE, of the Stockholm museum, Sweden, who probably stands at the head of European students of aboriginal art, has lately published an elaborately illustrated folio entitled 'Studies in American Ornamentation,' of which there is an extended notice in *Globus*.

He examines with patient care the art-motives of a number of tribes of North and South America. His investigations show that in nearly all examples the oldest decoration was anthropomorphic or zoomorphic. Emblems of the wind, the water, etc., also occur. A certain number are figured of which the interpretation is obscure.

Dr. Stolpe is severe on Hamy, Schurz and other modern writers who, in the face of well-known principles of scientific investigation, spend their time in seeking out analogies with the Old World in ancient American art. He has not found a trace of such cultural connection, and declares that wherever the material has been abundant all native American art-development can be proved to have been indigenous.

It is to be hoped that this work, which is in Swedish, will soon be translated into English.

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#### NOTES ON INORGANIC CHEMISTRY.

As briefly noted in SCIENCE, fluorin has been at last liquefied. Professor Moissan, of Paris, brought all his apparatus for the production of fluorin to the Royal Institution, where he could avail himself of the

unrivalled appliances for the production of intense cold, as well as of the assistance of Professor Dewar. An account of the experiments is given in the *Comptes Rendus*, and with notes by Professor Crookes in the *Chemical News* of June 11th. The difficulties encountered in the liquefaction of fluorin are its intensely corrosive action and its very low temperature. Several liters of liquid oxygen, the refrigerant, were used in the research. Happily, at very low temperatures fluorin loses much of its chemical activity, no longer attacking glass. Fluorin becomes liquid at  $-185^{\circ}$  C., is clear yellow and possesses great mobility. At this low temperature silicon, carbon, sulfur, phosphorus and reduced iron previously cooled in liquid oxygen and then placed in an atmosphere of fluorin, do not become incandescent, and the iodine of potassium iodide is not displaced by fluorin. Benzene and turpentine are, however, decomposed with incandescence when the temperature rises to  $-180^{\circ}$  C., showing the great affinity of fluorin for hydrogen. Note is made of the fact that when fluorin is passed through liquid oxygen a white flocculent precipitate is formed, which when filtered off deflagrates with great violence as soon as the temperature rises. It would seem to be a compound of fluorin and oxygen, and is being further investigated.

In a recent *Comptes Rendus*, Berthelot and Vieille give an account of further investigations on the dangers attending the storage of acetylene. They had previously shown that, if under less than two atmospheres pressure, acetylene cannot be detonated by fulminates or by red-hot wire. They now show that acetone is a good solvent for acetylene. While such a solution is still capable of explosion, it is much safer than the gas alone, and the pressure at which an explosion is possible is raised from two to ten kilograms per square centimeter. In a large vessel the amount of

acetylene that can be safely stored is fifty times greater with the acetone than without it.

At the conference of the Institution of Civil Engineers, held in London the last of May, Professor Biles read a paper before the Shipbuilding Section on 'Improved Materials of Construction.' In the course of the discussion which followed it was strongly brought out that nickel steel is the coming material for shipbuilding, provided its cost can be made satisfactory. For this, it was said that new deposits of nickel must be discovered and the cost of its metallurgy must be reduced.

THE *Engineering and Mining Journal* gives a report of the Carborundum Company for 1896, by which it appears that the output of crystalline carborundum for last year was nearly six hundred tons. It seems probable that the amorphous carborundum formed in the manufacture, which has heretofore had no use, will ultimately displace ferro-silicon in the manufacture of steel. Germany alone would use 2,500 tons of carborundum annually if it could be furnished at not over six cents a pound, and the Carborundum Company claims it can do this.

J. L. H.

#### SCIENTIFIC NOTES AND NEWS.

WE are informed that the preliminary programs for the meetings of the sections of the American Association for the Advancement of Science promise many interesting papers and a large attendance. No less than twenty-five papers have already been entered to be read before the physical section, including contributions from a number of leading physicists, and other sciences will be equally well represented. We hope to publish in advance of the meeting the full programs for all the sections.

THE fourth summer meeting of the American Mathematical Society will be held, as we have already announced, at Toronto, Canada, on Monday and Tuesday, August 16th and 17th.